

discocellular spot on the belt; several greyish-brown costal spots, and an imperfect series along the outer margin; a discal spot beyond the cell and a streak near the anal angle tawny. Body pale brown; pectinations of antennæ blackish. Under surface whity brown; wings mottled with grey, with blackish discocellular dots; primaries with a central costal spot and discal arched streak grey. Expanse 1 inch 3 lines.

Hakodaté (*Whitely*).

The type of this species is somewhat rubbed; it is possible that in fresh examples there may be a brownish belt across the primaries.

[To be continued.]

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XLVI.—*On the Number of Cervical Vertebrae in Dinornis.*

By F. W. HUTTON, Professor of Zoology in the University of Otago.

THE number of cervical vertebrae in *Dinornis* was estimated in 1856, by Prof. Owen, at 15, in *D. elephantopus* (Trans. Zool. Soc. iv. p. 161); and this number was also adopted by Prof. von Haast in his printed schedule of Moa-bones in the Canterbury Museum. In Prof. Owen's paper in Trans. Zool. Soc. vol. x. p. 147, which, much to the regret of all New-Zealand naturalists, he announces as probably his last on the Moa, he still adheres to the same number, and suggests that in the photographed skeleton of *D. elephantopus* (more properly I now think *D. crassus*) in the Otago Museum there are two cervical vertebrae too many\*. However, specimens in the museum of the necks of individual birds show that the real number is 20 or 21; and I therefore think it necessary for me to give the evidence for my restoration of the skeleton referred to.

The museum possesses nine necks, or portions of necks, from the sand-hills at Shag Point, Otago, belonging to single birds. These were all found in their proper positions, and were at once strung, and then numbered so as to prevent the possibility of any subsequent misplacement. The species to which they belong cannot yet be accurately determined; but they are of three different sizes. The smallest (**A**, **B**, and **G**) belong, I believe, to *D. casuarinus*; the middle size (**C**, **D**,

\* Prof. Owen has been led into a mistake by having a photograph only to examine. In the skeleton, as restored, there are twenty-one, not seventeen, cervical vertebrae.

and **E**) to *D. gravis*; and the largest (**F**, **H**, and **I**) belong, I feel pretty sure, to *D. crassus*.

I follow Prof. Owen in regarding the first dorsal vertebra as that "which first retains its pleurapophyses as independent movable elements."

- A.** Five vertebrae, commencing with the first. The fifth has a slight median hypapophysis on the centrum. In the fourth it is strong.
- B.** Ten vertebrae, commencing with the first. The sixth has a very slight preaxial median hypapophysis. In the fifth it is well marked; in the seventh it is absent.
- C.** Eleven vertebrae, commencing with the second. The fifth (no. 4 of the series) has a median hypapophysis; there is none on the sixth.
- D.** Seventeen vertebrae, commencing with the first. The fifth has a median hypapophysis, the sixth none. All are cervical vertebrae; and in all both the neural spine and the hypapophyses (catapophyses of Mivart) are double. The hypapophyses are furthest apart in the fifteenth.
- E.** Seventeen vertebrae, commencing with the first. The fifth has a large median hypapophysis; on the sixth it is rudimentary, and absent on the seventh. All are cervical; and in all both the neural spine and the hypapophyses are double. The hypapophyses are furthest apart on the sixteenth.
- F.** Nineteen vertebrae, commencing with the first. The fifth has a slight median hypapophysis; there is none on the sixth. All are cervical. The neural spine is double in all. The hypapophyses are double in all, but they are nearly confluent in the last. The hypapophyses are furthest apart in the sixteenth.
- G.** Nineteen vertebrae, commencing with the first. The fifth has a slight median hypapophysis; there is none on the sixth. All the vertebrae are cervical. The neural spine is double in all. The hypapophyses of the last four vertebrae are destroyed.
- H.** Twenty-two vertebrae, commencing with the first. The fifth has a well-marked median hypapophysis; there is none on the sixth. The cervical vertebrae are twenty-one in number. The neural spine becomes single on the twentieth; and the hypapophyses become single on the nineteenth, but they are almost single on the eighteenth.
- I.** Twenty-three vertebrae, commencing with the fifth. A slight median hypapophysis on the fifth (first of the

series); none on the sixth. The first sixteen vertebræ of the series are cervical; and if the four missing vertebræ be added, it makes twenty cervical vertebræ altogether. The last seven are dorsal. The neural spine becomes single on the nineteenth. The hypapophyses become single on the eighteenth; and they are furthest apart on the fourteenth. I have taken the first of this series as the fifth; but, judging, from **B** and **E**, it may possibly be the sixth, in which case the rest of the neck-vertebræ would agree with **H**. This specimen has also the pelvis and the caudal vertebræ, of which latter there are ten, the last two being ankylosed. The second caudal vertebra agrees with the one figured by Prof. Owen as either the first or the second.

From a comparison of these necks with the drawings and descriptions of Prof. Owen in his last paper I infer that the vertebra figured by him as the third is really the fourth, that figured as the fourth is the sixth, that as the sixth is the eighth, that as the twelfth is the fifteenth, that as the fourteenth is the seventeenth or eighteenth, and that as the fifteenth is the twentieth or twenty-first.

XLVII.—*Two new Crustacea from the Coast of Aberdeen.*

By C. SPENCE BATE, F.R.S.

Two small Crustacea were sent to me some short time since by Mr. Sims, of Aberdeen, as having been taken by him on that coast during last summer. One belongs to the Diastylidæ, the other to Amphipoda. After carefully noting all the specimens with which I am acquainted, as well as consulting the works of Sars and other naturalists, I am induced to believe that neither of them has been described. I propose therefore to name them respectively *Diastylis bimarginatus* and *Lestrignonus spinidorsalis*.

*Diastylis bimarginatus* has the carapace very long and oval. The infero-lateral margin is anteriorly serrated beneath the antennal notch. A second ridge within the lateral margin repeats it, commencing at the base of the rostral process, where it is serrated, and continuing until near the posterior extremity of the carapace, where it becomes confluent with the infero-lateral margin. The rostral projections of the carapace are serrated on the upper margin. Five somites of the pereion are exposed behind the carapace, each becoming longer, narrower, and less deep as